

# 2933 2933a

Diag. Ch. No. 1251-2 & 1252-2

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
....., Director	
<div></div>	
State: Florida	
DESCRIPTIVE REPORT	
<div><div>Topographic</div><div>Hydrographic</div></div>	Sheet No. 2933
LOCALITY	
Key West Harbor and	
Northwest Channel	
-1908 additions 1909, 1913, 1914, 1915	
CHIEF OF PARTY	
N.H. Heck	

GOVERNMENT PRINTING OFFICE

# 2933 2933a

2933



Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

*W. H. Starnes*  
Superintendent

State: *Florida*

DESCRIPTIVE REPORT.

*H. H. C.* Sheet No. *2933*

LOCALITY:

*Key West*  
*Harbor*

190 *8*

CHIEF OF PARTY:

*W. H. Starnes*

C. & G. SURVEY,  
LIBRARY AND ARCHIVES.

JUN 6 - 1908

Acc No.

DESCRIPTIVE REPORT

Hyd. Sheet "A"

2933

Key West Harbor, Fla.

The work within the limits of this sheet was done when weather conditions would not permit of work outside. The depth dragged to is fixed by the depth appearing on the chart the object being to determine the existence of obstructions of less depth than charted.

This work was not completed as the amount of weather suitable for this work was limited since work was carried on outside whenever possible.

The survey resulted in finding several cases where the depth was slightly less than charted. One 23 foot uncharted shoal was found in the channel off the northern end of the dock line. Several anchors were picked up with the drag brought to the surface and taken out of the channel. One of these weighed 600 lbs., a curious example of the uses to which the drag may be put.

# STATISTICS FOR SHEET "A"

Key West Harbor, 1908

Date	day	vol	Launch #1	Launch #2	miles
			angles	sound'gs	
Mar 20	A	1	76	2	2 1/2
" 26	B	1	14	1	1/4
			Launch #3	Launch #4	
" 30	C	1	44	1	3/4
April 15	D	1	32	3	3/4
16	E	1	30	1	1/2
May 14	F	1	5	1	
Special hydrography (with leadline)					
Feb 14	A	1	44	99	1 3/4
Totals			245	108	6 1/2
Total angles			413		
" soundings			108		
" miles			6 1/2		

2933

PROJECTION No. A

KEY WEST HARBOR

Scale 1/15,000

Surveyed with wire drag

March to May 1908

N.H. Heck, Chief of Party

Tide station, Key West L.H.E. Wharf

*Verified by H.L. Simons*

V.E.C.  
June 16, 1908.

HYDROGRAPHIC SHEET NO. 2933.

Key West Harbor, Florida, by Assistant N. H. Heck,  
in 1908.

TIDES.

Key West,  
Light House Establishment

	ft.
Mean low water, or plane of reference on staff	2.1
Lowest tide observed " "	0.8
Highest " " " "	5.5
Mean rise and fall of tides	1.2

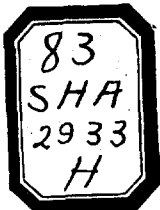
Coast and Geodetic Survey  
JUN 26 1908  
TIDAL DIVISION.

Hyd Sheet No 2933

June 24 08

At several places on this sheet, where the drag struck, it will be noticed that the off depth of the drag is less than the depth found with the lead. There are also several places where the drag touched and no examination was made. For such cases the records should show why an examination was not necessary.

K. L. Simons



# 2933

C. & G. SURVEY,  
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JUN 2-1909  
Acc No.

Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

O. H. Tittmann

Superintendent.

State: Fla.

## DESCRIPTIVE REPORT.

Hyd.

Sheet No. 2933

### LOCALITY:

Coast of Florida

Key West Harbor and Northwest

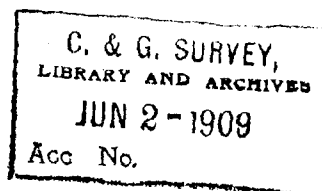
Channel.

1909

### CHIEF OF PARTY:

N.H. Heck, Assistant





Sheet 2933

Work continued from previous season

Chief of Party N. H. Heck. Assistant

Officers operating drags Geo. Olsen, W.O. C. H. Swick, Aid

Jan. 9 - May 12, 1909

Scale 1/15000

## HYDROGRAPHIC SHEET 2933

## DESCRIPTIVE REPORT Season 1909

Work was continued from that of the previous season to the head of the Man of War Harbor, and to the 18 foot curve on the western side of the harbor. A portion of the Northwest Channel was also dragged. The work was very slow, partly on account of the large number of obstructions, which however could be found in no other way and partly on account of the strong tides and the fact that only bad weather could be used for this work. The result of the work was a much more thorough knowledge of the depths in Key West Harbor. A number of anchors and similar obstructions were found.

Ten obstructions probably anchors were located. One anchor was taken up and removed. Another was dragged along the bottom but evidently caught in a rock and could not be lifted. These obstructions are shown on the sheet by a sounding taken at the point with the abbreviation "obs". Owing to their nature a sounding could not be taken on top of them so that at these points the depth should be considered 2-3 feet less. They are readily distinguished from shoals from the fact that the drag swings around them till the two parts make a very sharp angle., while there is no indication of rocky bottom. The positions are sufficiently close to enable a diver to readily find them, when it becomes desirable to remove them.

The most important shoals found were two 16 foot shoals one of which has been reported and published in the Notice to Mariners, both lying on the western side of the harbor opposite the docks. The other lies 0.3 mile NWxN from signal "Post"

It should be noted that the Middle Ground extends further to the southward than charted, and that opposite its lower end on the east side of the channel a 22 ft. shoal was found. This decreases the effective width of the channel for the deep draft vessels now using it materially.

In the part of the Northwest Channel examined the bottom was found to be very irregular and in many cases differing from the charted depths. The most important finds were a 16 and 17 ft. shoal lying in mid channel 0.7 mile NW of signal "Bar"

# Hydrographic Sheet 2933

Statistics for season of 1909

## DRAG 1

Date 1909	letter	Vol.	Launch 1		Launch 2		Remarks
			Angles	soundings	Angles	Miles	
Jan. 15	a	1	56	4	54	2.1	
" 16	b	1	84	7	74	3.0	
" 19	c	1	32	1	52	2.0	
" 25	d	1	76	4	82	3.0	
Feb. 3	e	1	44	1	50	2.5	
" 4	f	1	136	2	144	7.0	
" 16	g	2	100	5	88	5.0	
March 5	h	2	64	5	54	3.0	
" 6	j	2	26	4	24	1.0	
" 20	k	2	6	1	4	0.1	
" 22	l	2	36	2	30	1.5	
" 27	m	2	108	5	86	5.0	
April 15	n	2&3	306	2		5.4	Planigraphic system
" 16	o	3	120	1		1.2	" "
			1206	44	742	41.8	
			742				
Total			1948	44		41.8	

## DRAG 2

			Launch 1		Launch 2		
			Angles	soundings	Angles	Miles	
Jan. 9	a	1	190	1	144	9.7	
" 13	b	1	36	4	28	1.1	
" 15	c	1	82	4	60	3.1	
" 16	d	1	142	5	118	6.0	
" 19	e	1	24	2	32	0.5	
" 22	f	1&2	68	2	66	2.8	
" 25	g	2	86	7	86	3.8	
Feb. 4	h	102	102	4	90	3.2	
" 13	j	2	4	2	2	0.1	
March 22	k	2	18	0	18	1.0	
" 27	l	2	90	5	102	4.0	
" 29	m	2	10	2	14	0.5	
April 15	n	2	132	5		2.1	Planigraphic system
" 16	o	2	30	2		0.3	
May 12	p	3	270	1		3.1	
			1284	46	758	41.3	
			758				
Totals			2042	46		41.3	
Launch 2			1948	44		41.8	
Totals for sheet			4090	90		83.1	
Angles in Sdg. record 1			131				
" " " " 2			110				

Total angles 4331  
 " soundings 90  
 " miles of line 83.1  
 " square miles 4.6



C. & G. SURVEY,  
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MAY 10 1913  
Acc. No. ....

2933

3  
3  
3  
2

Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

O. H. Tittmann  
Superintendent.

State: Fla.

DESCRIPTIVE REPORT.

Hyd. Sheet No. 2933

LOCALITY:

Florida Reefs

Key West Harbor and Northwest  
Channel

1913

CHIEF OF PARTY:

N. E. Heck

11-4845

DESCRIPTIVE REPORT HYD. SHEET NO. 2933

The work on this sheet is not considered completed-in fact the complete development to determine to what depth might be safely taken in view of possible future improvements of the channel would require a long time. The channel is very irregular and narrow in places and the tidal currents are strong probably as high as 3 knots at times. With the exception of one day all of the work was done under the most unfavorable conditions in which work can be done.

1. For the purposes of description the area covered on this sheet is divided into two parts, 1/ Key West Harbor including all are south of parallel 24 34 2. Northwest Passage to include the channel to the beginning of the channel improved by the U.S. Engineers.

1. Re- The most important discovery was the finding of a number of 15 foot shoals on the westerly side of the southern extension of the Middle Ground. This narrows the approach to the Northwest Channel from the south and also affects vessel leaving Key West Harbor by the Northwest Channel and passing southward of buoys C 13 and C 15.

A charted depth of 15 feet which was apparently deduced from previous wire drag work was dragged over to a depth of 17 feet but the drag scraped the bottom, indicating that there is probably not less than 16 ft. One third of a mile SE of Middle Ground Bn. 11 ft was found where 19 to 23 ft. was formerly charted.

2/ To the westward of buoy C 13 and about 1/4 mile SxE from this (where the chart showed 16 ft.) 15 ft shoals

2.  
were found. These form part of a continuous ridge (charted)  
3/4 mile long parallel to the channel, the depth varying  
from 15 to 19 ft.. The previous general depths were 19 to  
22 ft.

It is evident from the finding of these shoals that navigation of this channel <sup>with</sup> <sup>drafts</sup> to greater depths than 15 ft/ is dangerous and should not be recommended at least until the channel is better buoyed.

The draftsman inspecting this sheet should refer to Descriptive Report for sheet no. 2932 for discussion of method of plotting depths and statement as to accuracy of the depths.

*corrections*

*Note depths of 23 + 24 ft. in Key West Harbor on west side of channel north of Whitehead Spit.*

*Note that F.E.C. & R.R. Co's wharf has been located on this sheet. This was done after a report was received that it was incorrectly charted.*

VEC  
May 16, 1913

HYDROGRAPHIC SHEET 2933.

Approaches to Key West, Florida, by Assistant  
N. H. Heck in 1913.

TIDES.

	Key West ft.
Mean low water, or plane of reference on staff	4.1
Lowest tide observed " "	2.8
Highest " " " "	7.5
Mean range of tide	1.2

(Chart and Sounding Survey)

MAY 16 1913

TIDAL DIVISION

2933

C. & G. SURVEY,  
LIBRARY AND ARCHIVES  
APR 17 1914  
Acc. No. \_\_\_\_\_

Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

O. H. Tittman

Superintendent.

State: FLORIDA.

DESCRIPTIVE REPORT.

2933

Hyd.

Sheet No. 2933.

LOCALITY:

Key West Harbor

&

Northwest Channel

Wire Drag Survey Continued from 1913

1914.

CHIEF OF PARTY:

N. H. Heck,

Assistant.

11-4045



Sheet No. 2933.

F L O R I D A .

Key West Harbor and Northwest Channel.

Wire Drag Survey Continued from 1913 .

----- 1914. -----

January 30,----- March 30.

N. H. Heck,	Assistant, Chief of Party.
J. A. Daniels,	A i d .
Geo. Olsen,	Watch Officer .
Harry Leypoldt,	A i d .
E. W. Eickelberg,	" .
W. H. Clark,	" .
Maurice E. Levy,	" .
Carl E. Risvold,	Deck Officer.
<u>Scale:- 1/15000</u>	

Tide Gauge,- Key West Automatic and Middle Ground & Northwest  
Passage Staff Gauge.

Florida Reefs,  
Key West, Florida.

STATISTICS.

Sheet No. 2933- 1914.

Date.	Day.	Vol.	Angles.	Miles.	Drag Length	Soundings.		Remarks.
						Number	Angles.	
Jan. 30	A	1	132	3.5	2100	4	10	Hydrography.
Feb. 13	B	1	84	1.75	1150	9	24	
17	C	1	210	3.0	1200	15	44	
18	D	1	84	1.25	1200	9	24	
Mar. 13	E	1	96	2.0	1500	1	2	
16	F	1	156	2.5	1500	13	33	
19	G	1	228	3.5	400	7	20	
20	H	1	156	1.8	400	12	28	
21	J	2	234	4.0	600	5	15	
23	K	2	88	2.8		256		
28	L	2	30	0.2	900	10	25	
30	M	2	126	2.0	1200	6	16	
			1624	28.5		347	241	

Summary,

Total No. Angles, ----- 1865  
 " No. Miles, ----- 28.5  
 " No. Soundings, ----- 347  
 " No. Square Miles, ----- 2.

E. M.

The 1914 work on this sheet consisted in dragging small areas previously missed in Key West Harbor and in completely dragging sufficient of K99G9999 Northwest Channel to a depth of not less than 17 feet so that a channel of such depth could be marked by the Bureau of Lighthouses from Key West Harbor to the dredged cut at Northwest Bar.

A copy of chart ~~12~~ 584 showing the results of the work in this channel has been forwarded. Especial attention was paid to the narrow part of the channel between the mid channel buoys and also to the region where the Northwest Channel joins Key West Harbor. The 17 foot curve may now be accurately defined.

All the area in Key West Harbor is now dragged except a few small areas where anchored vessels, mooring buoys etc. prevented.

In the Northwest Channel the drag work indicates that the 16 foot sounding <sup>from R.P. 12374 charted</sup> ~~shown~~ on the eastern side of the channel northward of buoy C 13 is not plotted in the correct position. I recommend that the source of this sounding be investigated and that after revision of the tidal data the wire drag work be carefully examined and if the non-existence of this shoal at this point is proved that the <sup>17</sup> ~~16~~ foot sounding shown at no. 4 h replace it. This is a narrow part of the channel and the presence or nonexistence of this shoal is important. The wire drag work in this channel was done under unusually favorable conditions and the depth was carefully checked, and can be accurately relied on.

The position of buoy N 3 is given as it was found but the Lighthouse Inspector intended to remove it to its charted position at the first opportunity. No attempt was made to develop the channel on the western side. Such work is slow, tedious, and expensive and the work that has been done is all that especially needs immediate attention.

Soundings were made in Key West boat harbor to show results of dredging by the F.E.C.R.R.

Changes in topography.

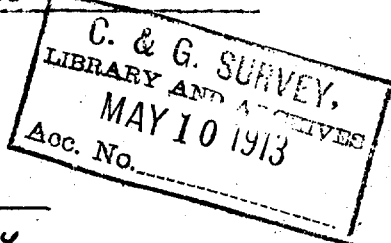
The U. S. Army dock at Fort Taylor completed in 1913 is shown.

The changes of the Florida East Coast R.R. both dock and made land are indicated.

Note that Northwest Channel Bar light has been moved to a new structure, and its position was determined by triangulation. Its position now meets the requirement that this light can be brought in range with Sand Key Light for entering the dredged cut.

Hyd. Sheet 2933 Key West Harbor and Northwest Channel

Date 1913	Day	Vol	Angles	Miles	Drag length	Soundings number	angles	Remarks
2-17	A	1	16	1 1/2	1800	4	8	
3-19	B	1	108	1	1500	12	24	
3-22	C	1	84	1 1/4	1800	7	14	
27	D	1	42	1 1/2	1500	14	28	
4-8	E	1	54	1 1/4	1800	4	8	
30	F	1	354	1 1/2		52	104	
Totals			658	13 1/2				



Tides- Key West Automatic Tide Gauge

R. H. Sands Observer

See records at Office

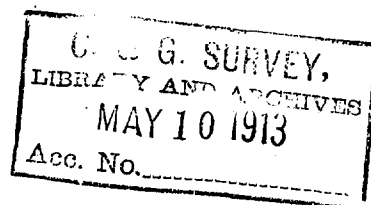
Miles 13 1/2

Angles 762

Sdgs 52

Sq. Miles 4

Continuation of wire drag work on sheet 2932



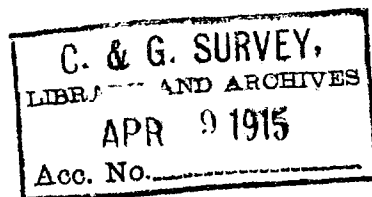
Object	Distance	Direction
Stump	From west Crawfish Key	At west Crawfish key
	Meas. one way , 406.30M.	From Sand Key L.H.
	Meas. other way, 406.34	+ 69° 21'
	Mean. 406.32	

	Lat.	D.M.	Long.	D.P
Pole	24° 35'	11731 m	81° 50'	709 m

Date	Letter	Volume	Angles	Soundings	miles	Vessel
Feb. 14-1908	A	1	44	99	1.7	Range
Mar. 20 "	A	1	76	2	2.5	"
" 26 "	B	1	14	1	0.2	"
" 30	C	1	44	1	0.7	"
Apr. 15 "	D	1	32	3	0.7	"
" 16 "	E	1	30	1	0.5	"
May 14 "	F	1	12	1	0.6	"
		6	252	108	6.3	



# 2933



Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

*E. Lester Jones*  
Superintendent.

State: *Florida*

DESCRIPTIVE REPORT.

*Hyd.* Sheet No. *2933.*

LOCALITY:

*Key West, Fla.*

*Additional work*  
*Season of 1915*

CHIEF OF PARTY:

*N. H. Heck*

11-4646



POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

*Hyd. 2933*

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

Key West, Florida

Sheet *2933 1915*

Date	Letter	Vol	Angles	Miles	Drag	Length
2-12	A	--	-----	-----	-----	-----

Soundings	
No.	Angles
8	16

DESCRIPTIVE REPORT \*HYD. SHEET NO. 2933 -1915

Soundings taken in Key West Harbor from a sounding tender are shown. It was intended to drag a few areas missed but a Greek steamer which had been ashore was anchored in Man of War Harbor in such a position as to prevent the use of the drag.

The present outlines of the F. E. C.R. R. terminal wharf is shown. The work on this sheet was fully reported in my letter of March 26.

Hyd<sup>c</sup> 2933

The 1914 work on this sheet consists in dragging part of the North West Channel and covering small areas previously missed in Key West Harbor.

The following inaccuracies in plotting were noticed:

Sounding 1A does not plot well, when  $61^{\circ}35'$  is used as the left angle, but when the right angle as recorded and the check angle are used the sounding falls in the proper place.

Positions 4A, 12c, and 14c were plotted wrong. In the last case the right angle was plotted as  $45^{\circ}16'$  instead of  $40^{\circ}16'$ .

J. B. Shklover

Aug. 3-1914

VEC  
May 14, 1915

*L. P. S.*

HYDROGRAPHIC SHEET 2933.

Florida Reefs, Florida, by  
Assistant N. H. Heck in 1915.

TIDES.

	Key West ft.
Mean low water, or plane of reference on staff	4.1
Lowest tide observed " "	2.8
Highest " " " "	7.5
Mean range of tide	1.2

Applied to comp. 576 J.M.A. Dec. 1940